NCIR
Technical Onboarding Process

Version 1.2

Document Owner: NCIR

Document Revision History

Date	Version Number	Resource	Brief Description of changes
03/07/2014	1.0	Sriram Venkataraman	Created Document
10/15/2014	1.1	Sriram Venkataraman	Updated to include internal testing.
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North Carolina Immunization Registry (NCIR) Technical Onboarding process:

1.0 Background:

The purpose of this document is to outline the NCIR Technical onboarding process for providers connecting to the North Carolina Immunization Registry (NCIR). As part of Meaningful Use Stage 2, Eligible Hospitals and Eligible Providers are required to register their intent to submit data with the Division of Public Health (DPH). Eligible Hospitals (EH) and Eligible Professionals (EP) must register with NCIR/DPH within 60 days of the reporting period. As part of registration with DPH, providers will complete the NCIR onboarding questionnaire form.

The NCIR team will review the responses to the NCIR Onboarding questionnaire form to verify data exchange capability, type of data exchange and timing of the onboarding process. If the provider has the required data exchange capabilities, the NCIR team will assign the provider/hospital to one of the following three categories: [Note that being in any of the following three categories allows an organization to meet that particular MU2 public health objective.]

A. **In progress or ready to begin onboarding:** Once a decision is made to onboard an organization, the NCIR will send an e-mail to the organization indicating that they can start the onboarding process. The remainder of this document (from section 2 below) addresses the NCIR specific steps to be completed as part of the onboarding process. Upon successful completion of the onboarding steps the provider can begin sending data to production.

B. **Waiting for invitation from the state:** The Provider has completed registration with DPH and is waiting for an invitation from the state to onboard. The number of providers in this status depends on the level of interest by providers to participate in Meaningful Use Stage 2 for a specific reporting period.

[Note that NCIR specifications and onboarding documents are subject to change and are released to the organization at the time of the onboarding invitation. As specifications are subject to change, receiving the latest specifications prior to onboarding helps providers avoid costly, unnecessary changes, and set up based on outdated specifications. The State [NC DHHS] will have a FAQ that responds to commonly asked questions and the NCIR Data Exchange Helpdesk will continue to respond to general questions about the status of onboarding and registrations. However, it should be noted that the North Carolina Department of Health and Human Services (NC DHHS) will respond to questions about HL7 technical specifications from organizations that are invited to on-board. This allows the NC DHHS to provide a level of service necessary to providers who are currently onboarding.]

C. **Ongoing submission achieved:** Providers that have completed the onboarding process and are sending ongoing data submissions.

2.0 Resources needed from Provider Organization:

The Resources needed from provider organizations for this exercise include personnel familiar with Immunizations and EHR system as well as assistance from the EHR vendor. The provider organization personnel may need the help of the EHR vendor to set up vaccines, trade names, etc., please make sure you have all necessary resources before agreeing to a project schedule. NCIR personnel will not be able to help with any questions related to EHR system.

3.0 Onboarding process:

The onboarding process has been divided into four phases. The four phases are Exploratory, Preparation, Testing and Production. The following paragraphs define the purpose of each phase and use sub-sections to outline the steps and processes that will take place in each phase.

3.1 Exploratory Phase

Upon completion and agreement to all required documentation and initial management approval, we will begin an exploratory phase with the provider. During this phase we will assess the ability of the provider to adhere to all standards used by the NCIR. Reaching the exploratory phase is not a guarantee to make it to "pilot" status. The sole purpose of this phase is to evaluate and assure both parties that the implementation will reach completion with minimal interference.

1. **Provider/EHR approaches NCIR**

   The NCIR or the provider will reach out to initiate data exchange services with the NCIR. For either scenario the provider/EHR will undergo an exploratory phase for the purpose of determining the readiness of a provider for the pilot program.

2. **Fill out NCIR Questionnaire**

   The NCIR will send the provider a Questionnaire asking basic information about the organization, EHR, Data exchange capabilities and immunization counts.

3. **Initial Management Approval**

   After the provider completes the questionnaire, management will make an initial decision whether or not to proceed with the exploratory phase.

4. NCIR Documentation

NCIR sends the following documentation for the provider organization and EHR vendor to review and complete.

i. Policy

a. NCIR Data Exchange Policy

ii. Latest VXU/ACK LIG and QBP/RSP LIG

iii. NCIR Required/Recommended Field document.

iv. Transport specifications.

5. NCIR reviews Required and Recommended Fields/Questionnaire

The organization will review the above documents and send the completed NCIR Required/Recommended document for review. The NCIR team reviews the required and recommended fields and questionnaire to determine the capability and readiness of the provider. In addition, the provider will inform the NCIR if they are compliant with HL7 2.5.1 specifications and are capable of meeting transport specifications outlined in the documents above **or** that their software needs changes to meet the above specifications. If software changes are needed, the organization will provide a timeline when they will be able to meet the specifications.

6. Verification of Compliance

The following items will be reviewed along with any additional information provided by the organization before forwarding to management.

i. HL7 2.5.1 capability including VXU/ACK and QBP/RSP

ii. Error processing capabilities: Ability to review and correct error/warning by user.

iii. Query/Response capability: Ability to initiate a query for immunization history and recommendations and consume response from the NCIR.

iv. Required and Recommended fields document: This is checked to verify if the provider is capable of submitting all needed fields for the interface to function.

v. Sample HL7 message: Review sample HL7 messages provided for historical and administered doses.

7. Management Approval:

Management does a summary review based on submitted information and gaps (if any) making a decision to proceed with the pilot or to hold off until all needed items are developed or available. If the project is approved it will move into the Prep Phase of Onboarding. If approval is not given a re-evaluation will begin after the needed enhancements are available.

3.2 Preparatory Phase

The Preparatory Phase has been designed to compile needed information and set up the NCIR and EHR test environments. The information collected includes organization and Site information, user agreement, clinical data elements, and vaccine and trade name listing. The last step of the prep phase is setup of connections between the NCIR and EHR to allow initiating Testing Phase.

1. NCIR Set up documentation

The organization will complete the following two documents and send to the NCIR team to start set up.

i. Agreements needed by NCIR, DPH: Eligible Hospitals (EH) and Eligible Providers (EP) need to agree to the NCIR Data Exchange Policy and send completed confidentiality/user agreement to the NCIR Technical Data Analyst.

ii. Org/Site document to Provider/EHR: This document contains information needed to set up Organization and Site Info in the NCIR.

iii. NCIR Organization/Site/Manage DX set up in the NCIR: NCIR will complete the setup of Organization and Site information in the NCIR test system and provide the NCIR facility ID (for message header MSH-4) and NCIR Site id (for Immunization location) to the organization. NCIR will also set up the *Manage Data exchange screen* with applicable values to allow data exchange for the organization.

2. NCIR Clinical Data Elements set up in NCIR UAT and Synced with EHR Test.

Please provide a list of ordering providers and administering providers (clinicians) to the NCIR Technical Data Analyst. The NCIR Technical Data Analyst will add ordering providers and administering providers to the NCIR test system and will send a screen shot by fax or e-mail for verification. The organization will verify set up is correct before proceeding to the next step. The list of clinicians and ordering providers set up in the NCIR must match what is in the EHR. It is suggested to use the list from production to minimize impact when migrating to production.

3. Vaccine and Trade Name review/correction

A list of supported Vaccine and Trade Names and their associated CVX and NCIR Trade Name codes are available in the **NCIR Vaccine and Trade Name mapping** document and LIG's. Verify that Vaccine and Trade Names in the NCIR list are included in the EHR system and mapped to the correct CVX and NCIR Trade Name codes. Provide a print out of Vaccine names along with associated CVX codes, Trade names, and associated NCIR trade name codes from the EHR system to the NCIR Technical Data Analyst for review. Note that for vaccines administered by your organization you will need to provide CVX codes and NCIR Trade Name Codes in the HL7 2.5.1 message.

The NCIR Technical Data Analyst will review the Vaccine and Trade Name listing from the EHR system (listed in above steps) and will recommend changes if any. If corrections are needed, the organization will provide an updated Vaccine and Trade Name listing.

4. NCIR sends the following documents for connection to the NCIR test environment:

i. NCIR UAT credentials needed to connect to the NCIR test (referred to as UAT) system.

ii. Transport specs for UAT server to Provider/EHR for reference.

5. Connection made in UAT/Connection testing:

The EHR vendor/provider will make the connection between the EHR and the NCIR test environment to enable sending and receiving of real time transactions. The EHR vendor will test the success of a connection by sending both HL7 2.5.1 VXU and QBP transactions and receiving ACK and RSP transactions respectively.

3.3 Testing Phase

1. **Internal Testing:**
    i. Prepare and execute test cases to verify LIG specs
    Once a connection is established, an organization will perform internal testing using test cases developed internally. The test cases, at minimum, will include adding all available vaccine and trade names used by the clinics and reviewing the resulting HL7 messages - addressing resulting error/warning responses from the NCIR. The testing process will also test different types of doses i.e. historical doses, state supplied and privately purchased doses.

2. **Preliminary Vetting Scenario:**
    i. Execute Preliminary Vetting Scenario and send results to the NCIR team:
    The NCIR Technical Data Analyst will send the Preliminary Vetting document with test scenarios. The provider will enter these 14 scenarios in the EHR system and send the transactions to the NCIR verifying results using acknowledgement received; include the HL7 message generated for each of these scenarios.

    ii. Review of Preliminary Vetting Scenario:
    The provider will send the completed Excel document to the NCIR Technical Data Analyst for review. The provider will fix any issues identified in the preliminary vetting prior to the start of clinical testing. Movement to clinical testing will not occur until all issues have been resolved with the Preliminary Vetting Scenario.

3. **Clinical Testing:**
    i. Execute clinical test cases and send results to the NCIR for review:
    The NCIR Technical Data Analyst will send the NCIR Data Exchange Testing Manual to the organization. This manual will contain specific test cases that must be met to complete the onboarding process.

    ii. Test case entry in the EHR: The organization will enter the test cases from the NCIR Data Exchange Testing Manual into the EHR system and will fax/e-mail the following screen prints from the EHR system to the NCIR Technical Data Analyst
        a. Client demographic information including responsible person and address.
        b. Immunization screen to show immunizations entered.
        c. Client contra-indications

    Entering test cases into EHR system may automatically trigger corresponding HL7 2.5 messages to be created and sent to the NCIR. If not, check with EHR vendor and perform necessary actions to send the corresponding HL7 2.5 messages to the NCIR. Once all test cases are entered into the EHR system, the provider organization will notify the NCIR personnel by e-mail (to ncirdataexchange@dhhs.nc.gov) that the test cases have been sent to the NCIR. In the e-mail include your organization name, date and approximate time the test cases were entered and sent to the NCIR.

iii. NCIR Test Case and HL7 message Review: NCIR Technical Data analyst will review client and Immunization information received in the NCIR along with screen prints provided. The NCIR Technical team will also review HL7 messages received and any additional reports as needed before providing review results.

iv. Repeat tests from last step if needed: If changes are required to EHR system or user procedures as a result of previous steps, the NCIR Technical Data Analyst will provide feedback and repeat the tests until all test cases pass successfully. This is an iterative process and will depend on the issues identified in the test cases.

4. **Testing Signoff:** Once all test cases pass, the NCIR Technical Data Analyst and organization representatives will sign off on the onboarding process; the completion of the onboarding process demonstrates that the organization is ready and has the technical capability to send data to the NCIR in production.

3.4 Production Phase

The final phase is covered, in detail, in the Business Onboarding manual. For further info please refer to the Business Onboarding Manual document.

4.0 Appendix

4.1 Flowchart